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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/115.131 07/14/98 LAKIN

K

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MMC1/0407

EXAMINER

NORRIS, J

ART UNIT

PAPER NUMBER

2841

DATE MAILED:

04/07/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/115,131

Applicant(s)

LAKIN ET AL.

Examiner

Jeremy Norris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2000.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 and 12 is/are allowed.
- 6) ☐ Claim(s) 1,2,7 and 8 is/are rejected.
- 7) ☐ Claim(s) 3-6,9 and 10 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 14) ☒ Notice of References Cited (PTO-892)
- 15) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 17) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☐ Other:

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DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: The claim must begin with a capital letter. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Temple et al (US 4,905,075).

Temple et al (hereafter Temple) discloses, referring to Figure 5, a die (base 15) having an upper surface and at least one electronic device (semiconductor device 12c), and having a plurality of signal conductors (metallization layer 70) located on the upper surface of the die and having a bonding strip (the area underneath side wall member 20) located on the upper surface of the die, a lid (cover 30) made of a substantially non-conducting material and having a lower and upper surface and having a lower surface bonding strip (the portion of cover 30 above side wall member 20) and a plurality of lower surface signal conductor pads (plates 60a & 60b) located upon the lower surface of the lid and a plurality of upper surface signal conductor pads (apparent in the figure, but not specifically referred to) located on the upper surface of the lid and electrically

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connected to the lower surface signal conductor pads, wherein each lower surface signal conductor pad is also electrically connected to one of the signal conductor pads on the upper surface of the die, and the bonding strips on the upper surface of the die bonded to the bonding strip on the lower surface of the lid by a bonding material (side wall spacer 20) the lid covering the electronic device but not in physical contact with the device (12c). Temple does not specifically state that the semiconductor device 12 have an acoustically active portion. However, such devices are well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to use a semiconductor device having an acoustically active portion as a functional equivalent of the semiconductor device in the invention of Temple for the selection of any of these known semiconductor devices would be within the level of ordinary skill in the art [claim 1].

Additionally, Temple discloses a conductive material (conductive region 32) located within a hole in the cover 30 to electrically connect the upper and lower signal conductors of the lid [claim 2].

Furthermore the bonding strips on both the die and the lid completely surround the electronic device and hermetically seal the device [claims 7&8].

Allowable Subject Matter

Claims 11 & 12 are allowed.

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Claims 3-6 and 9-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 3, 4, and 11 state the limitations that "the lid further include a conducting strip on the upper surface of the lid that is electrically connected to the bonding strip on the lower surface of the lid". Additionally these claims recite the limitation " the bonding strip on the upper surface of the die and the bonding strip on the lower surface of the lid are made of conducting material and are electrically connected by the bonding material. These limitations were not found in the prior art.

Response to Arguments

Applicant's arguments filed 14 February 2000 have been fully considered but they are not persuasive. Specifically, Applicant contends that the prior art of Temple et al (US 4,905,075) does not disclose "'signal connector pads' located upon the upper surface of the die", but instead discloses "signal conductors located upon the upper surface of the die" in lines 2-5 on page 4 of paper number 3 of the instant application. Temple et al (hereafter Temple) discloses a die (base 15) that has been "patterned with a conductive means such as metallization layer 70" (see col. 11, ln 48-50). It is clear to those skilled in the art that the term "conductive means" encompasses many different terms such as signal connector pads, conductive tracks, signal traces, etc.. The fact that Temple does not use the specific term "signal connector pads" does not negate the

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disclosure of the claimed invention. Furthermore, Applicant contends that "Temple does not disclose electrical connections between the signal connector pads located upon the upper surface of the die and any signal connector pads located on the lower surface of the lid and signal connector pads located upon the upper surfaces of the devices, which devices, in turn are mounted upon the upper surface of the die." However, the signal connector pads located upon the upper surface of the die (metallization layer 70) is electrically connected to the device 12b (see col. 11, ln 48-52). Device 12b is electrically connected to signal pads (not specifically referenced but clearly shown in figure 5) on the upper surface of device 12b. The signal pads on the upper surface of device 12b are electrically connected to plate 60a (see col. 11, ln 67 - col. 12, ln 6). Therefore, it is clear that metallization layer 70 is electrically connected to plate 60a.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5,023,398, Mahulikar et al, discloses a chip sized package comprising a lid not in direct physical contact with the chip housed within.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Norris whose telephone number is 703-306-5737. The examiner can normally be reached on Tuesday - Friday, 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery Gaffin can be reached on 703-308-3301. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0658.

JCSN
April 5, 2000


Jeffrey Gaffin
Supervisory Patent Examiner
Technology Center 2800